

REMARKS

Claims 1, 2 and 4-7 remain in this application. Claims 3 and 8-15 are cancelled herein, claims 8-15 without prejudice to filing a divisional application directed to the subject matter of these claims. Claims 1, 2, 6 and 7 are rejected. Claims 3-5 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1, 2 and 4-7 are amended herein to clarify the invention, to broaden language as deemed appropriate and to address matters of form unrelated to substantive patentability issues. For the convenience of the Examiner, APPENDIX I is provided herewith having a complete set of pending claims with all amendments effected therein.

The specification is amended to provide reference numerals for elements described in the specification and designated in the drawings. The Abstract is also amended to be commensurate in scope with the claimed invention.

Claims 1, 2, 6 and 7 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Matsuno et al. reference (U.S. Pat. No. 4,814,133) in view of the Iwakura et al. reference (U.S. Pat. No. 5,638,478).

The Examiner's rejection is respectfully traversed in view of amendments to independent claims 1 and 2 to include the subject matter of original claim 3. Thus, claims 1 and 2 now recite that a resin density of a root part of each rib is the lowest

in comparison to a resin density at a tip part of the rib and central parts of the rib between the root part of the rib and the tip part of the rib.

In view of the Examiner indication that the subject matter of claim 3 is not described in the prior art of record (see the Office Action at page 4), it is respectfully submitted that the Examiner's rejection of claims 1, 2, 6 and 7 has been overcome and should be removed and that the present application is now in condition for allowance.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited. Please charge any deficiency or credit any overpayment to Deposit Account No. 10-1250.

Respectfully submitted,

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APPENDIX I

ALL PENDING CLAIMS WITH AMENDMENTS EFFECTED THEREIN

1. A polyethylene spacer for optical fiber cable including a central tensile member, an intermediate coating layer arranged on an outer periphery of the central tensile member and being compatible with polyethylene and a main coating arranged on an outer periphery of the intermediate coating layer and having continuous spiral grooves for accommodating optical fibers and which are inverted periodically in a lengthwise direction, the main coating being formed from polyethylene resin,
said spacer for optical fiber cable including a plurality of ribs defining said spiral grooves, a minimum rib thickness of said ribs being 1.0 mm or less and a groove inclination angle of a cross-section of said spacer at inversion parts being 18° or less,
a resin density of a root part of each of said ribs being the lowest in comparison to a resin density at a tip part of said rib and central parts of said rib between said root part of said rib and said tip part of said rib.

2. A polyethylene spacer for optical fiber cable including a central tensile member and a main coating formed from polyethylene resin and arranged on an outer periphery of the central tensile member, the main coating having

continuous spiral grooves for accommodating optical fibers and being inverted periodically in a lengthwise direction,

said spacer for optical fiber cable including a plurality of ribs defining said spiral grooves, a minimum rib thickness of said ribs being 1.0 mm or less and a groove inclination angle of a cross-section of said spacer at inversion parts being 18° or less,

a resin density of a root part of each of said ribs being the lowest in comparison to a resin density at a tip part of said rib and central parts of said rib between said root part of said rib and said tip part of said rib.

4. A spacer as set forth in claim 1 or 2, wherein an average roughness of bottoms of said spiral grooves is 1.2 μm or less.

5. A spacer as set forth in claim 1 or 2, wherein a spiral progression angle (β), as determined by:

$$\tan \beta = (d \times \pi \times \theta / 360) / p$$

where d is an outer diameter of said spacer, θ is a spiral groove inversion angle, and p is a spiral groove inversion pitch, is from 5° to 15°.

6. An optical fiber cable including a spacer as set forth in claim 1 or 2 and a plurality of tape-form optical fibers housed in at least one or more spiral grooves of said spacer.

7. An optical fiber cable including a spacer as set forth in claim 1 or 2 and a single-core optical fiber housed in at least one or more spiral grooves of said spacer.